

## Classification and Viruses Practice Test

### Multiple Choice

Identify the choice that best completes the statement or answers the question.

- \_\_\_\_\_ 1. Biologists use a classification system to group organisms in part because organisms
  - a. are going extinct.
  - b. are very numerous and diverse.
  - c. are too much alike.
  - d. share too many derived characters.
- \_\_\_\_\_ 2. The study of organisms requires the use of
  - a. only large, general categories of organisms.
  - b. only small, specific categories of organisms.
  - c. both large and small categories of organisms.
  - d. no categories of organisms.
- \_\_\_\_\_ 3. For many species, there are often regional differences in their
  - a. common names.
  - b. scientific names.
  - c. taxa.
  - d. binomial nomenclature.
- \_\_\_\_\_ 4. Scientists have identified and named
  - a. all living species.
  - b. all living and extinct species.
  - c. all extinct species.
  - d. a fraction of all species.
- \_\_\_\_\_ 5. Based on their names, you know that the baboons *Papio annubis* and *Papio cynocephalus* do NOT belong to the same
  - a. class.
  - b. family.
  - c. genus.
  - d. species.
- \_\_\_\_\_ 6. How do binomial, or two-part, names compare with early versions of scientific names?
  - a. They are longer.
  - b. They are shorter.
  - c. They are completely descriptive.
  - d. They are in English.
- \_\_\_\_\_ 7. The second part of a scientific name is unique to each
  - a. order in its class.
  - b. family in its order.
  - c. genus in its family.
  - d. species in its genus.
- \_\_\_\_\_ 8. A genus is composed of a number of related
  - a. kingdoms.
  - b. phyla.
  - c. orders.
  - d. species.
- \_\_\_\_\_ 9. Several different classes make up a
  - a. kingdom.
  - b. phylum.
  - c. family.
  - d. genus.
- \_\_\_\_\_ 10. The procedure of grouping organisms based on their evolutionary history is called
  - a. traditional classification.
  - b. binomial nomenclature.
  - c. derived characters.
  - d. evolutionary classification.
- \_\_\_\_\_ 11. In biology, an evolutionary innovation is also referred to as a
  - a. derived character.
  - b. taxonomic group.
  - c. molecular clock.
  - d. physical similarity.
- \_\_\_\_\_ 12. Similar genes are evidence of
  - a. binomial nomenclature.
  - b. mutations.
  - c. common ancestry.
  - d. different anatomy.
- \_\_\_\_\_ 13. What do all organisms have in common?
  - a. They use DNA and RNA to pass on information.
  - b. They are all prokaryotes.
  - c. They are all eukaryotes.

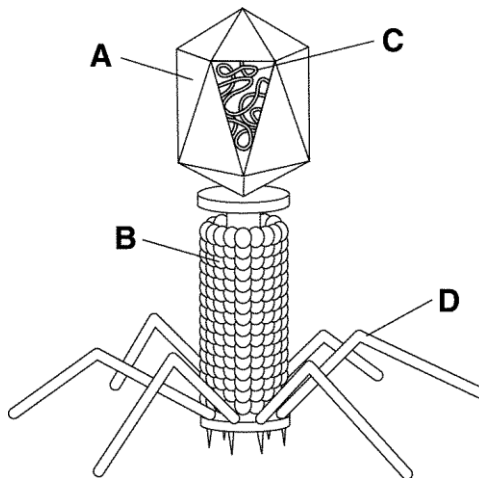
- d. They are genetically identical.
- \_\_\_\_ 14. Scientists have found that humans and yeasts
- have similar genes for the assembly of certain proteins.
  - share all aspects of cellular structure.
  - have nothing in common.
  - cannot be evaluated for degree of relatedness.
- \_\_\_\_ 15. What does the presence of similar genes in very dissimilar organisms imply?
- The genes were produced by different selection pressures.
  - The organisms share a common ancestor.
  - The organisms do not share a common ancestor.
  - The genes became identical through mutation.
- \_\_\_\_ 16. What is the main idea behind the model of a molecular clock?
- that neutral mutations accumulate at a steady rate
  - that certain traits are under the pressure of natural selection
  - that segments of DNA can be compared with segments of RNA
  - that phenotypes, not genotypes, are affected by natural selection
- \_\_\_\_ 17. Which kingdom contains heterotrophs with cell walls of chitin?
- Protista
  - Fungi
  - Plantae
  - Animalia
- \_\_\_\_ 18. Some scientists propose that the kingdom Protista should be broken up into several kingdoms. Which of these statements accurately supports this idea?
- Protists are all very similar and easy to confuse.
  - Protista contains very diverse organisms that do not fit into the other kingdoms.
  - Protists are the most numerous organisms on Earth.
  - Protista evolved before any other kingdom.
- \_\_\_\_ 19. The three-domain system recognizes fundamental differences between two groups of
- prokaryotes.
  - eukaryotes.
  - protists.
  - multicellular organisms.
- \_\_\_\_ 20. Organisms in the kingdoms Eubacteria and Archaeobacteria were previously grouped in a kingdom called
- Animalia.
  - Fungi.
  - Monera.
  - Eukarya.
- \_\_\_\_ 21. The instructions for making new copies of a virus are
- a part of a virus's capsid.
  - coded in surface proteins attached to the protein coat.
  - coded in either RNA or DNA.
  - found only in bacteriophages.
- \_\_\_\_ 22. What is the basic structure of a virus?
- DNA or RNA surrounded by a protein coat
  - a capsid surrounded by a protein coat
  - a tail sheath surrounded by tail fibers
  - a tiny cell surrounded by a cell wall
- \_\_\_\_ 23. Viruses
- are all about the same size.
  - vary greatly in size and structure.
  - rarely contain DNA or RNA.
  - can be seen with a basic compound light microscope.
- \_\_\_\_ 24. Which of the following characteristics of living things is NOT true about viruses?
- contain genetic material
  - evolve over time
  - obtain and use energy
  - able to reproduce

- \_\_\_\_ 25. A prophage is made of  
 a. bacteriophages.  
 b. carbohydrates.  
 c. capsid proteins.  
 d. viral DNA.
- \_\_\_\_ 26. Bacteriophages infect  
 a. other viruses.  
 b. bacteria only.  
 c. any available host cell.  
 d. cells undergoing the lytic cycle.

### Modified True/False

Indicate whether the statement is true or false. If false, change the identified word or phrase to make the statement true.

- \_\_\_\_ 27. An organism may have different common names that vary from area to area and language to language.  
 \_\_\_\_\_
- \_\_\_\_ 28. In binomial nomenclature, each species is assigned a two-part scientific name. \_\_\_\_\_
- \_\_\_\_ 29. In the name *Ursus maritimus*, the word *Ursus* refers to the species. \_\_\_\_\_
- \_\_\_\_ 30. An order is a broad taxonomic category composed of similar phyla. \_\_\_\_\_
- \_\_\_\_ 31. American vultures are now classified with storks instead of with African vultures because of evidence based on body structure. \_\_\_\_\_
- \_\_\_\_ 32. Biologists attempt to group organisms into categories that represent lines of evolutionary descent.  
 \_\_\_\_\_
- \_\_\_\_ 33. Cladistic analysis considers characteristics that have arisen as lineages have evolved over time.  
 \_\_\_\_\_
- \_\_\_\_ 34. The six kingdoms of life are Eubacteria, Monera, Protista, Plantae, Fungi, and Animalia.  
 \_\_\_\_\_
- \_\_\_\_ 35. Archaea differ from Bacteria in that the cell walls of Archaea lack peptidoglycans.  
 \_\_\_\_\_



**Figure 19–3**

- \_\_\_\_ 36. The structure labeled D in Figure 19–3 is called a tail fiber. \_\_\_\_\_

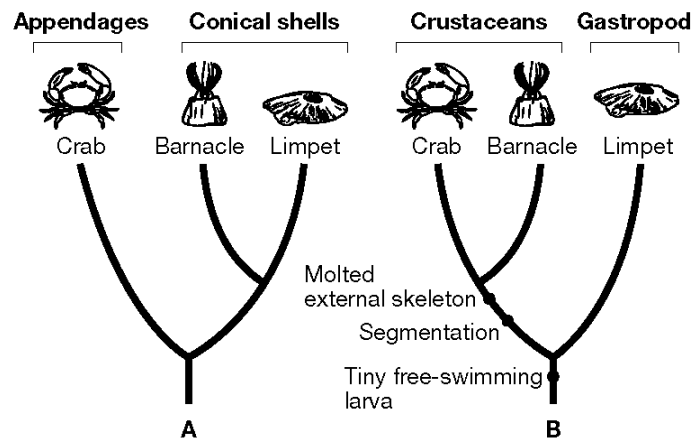
- \_\_\_\_ 37. The structure labeled A in Figure 19–3 helps attach this virus to a host cell during a lytic infection.  
\_\_\_\_\_
- \_\_\_\_ 38. In a lysogenic infection, host cells can make copies of virus DNA for many generations.  
\_\_\_\_\_

### Completion

Complete each statement.

39. When scientists use a(an) \_\_\_\_\_ for an organism, they can be certain they are all discussing the same organism.
40. The use of a two-part scientific name for organisms is called \_\_\_\_\_ nomenclature.
41. Traditional classification is based on general similarities of \_\_\_\_\_ among organisms.
42. In cladistic analysis, a characteristic that arises as a lineage of organisms evolves over time is called a(an) \_\_\_\_\_.
43. DNA analyses show that the \_\_\_\_\_ of many dissimilar organisms show important similarities at the molecular level.
44. Although viruses come in many different shapes, the core of every virus contains \_\_\_\_\_.
45. In a lysogenic infection, the viral DNA that is embedded in a host cell's DNA is called a(an) \_\_\_\_\_.
46. Scrapie, an infectious disease in sheep, is caused by a(an) \_\_\_\_\_.

### Short Answer



**Figure 18–1**

47. According to the cladogram in Figure 18–1, what two characteristics do crabs and barnacles share that limpets do not?
48. In Figure 18–1, what does diagram B, which is based on more recent evidence, show about the classification of animals shown in diagram A?

## Other

### USING SCIENCE SKILLS

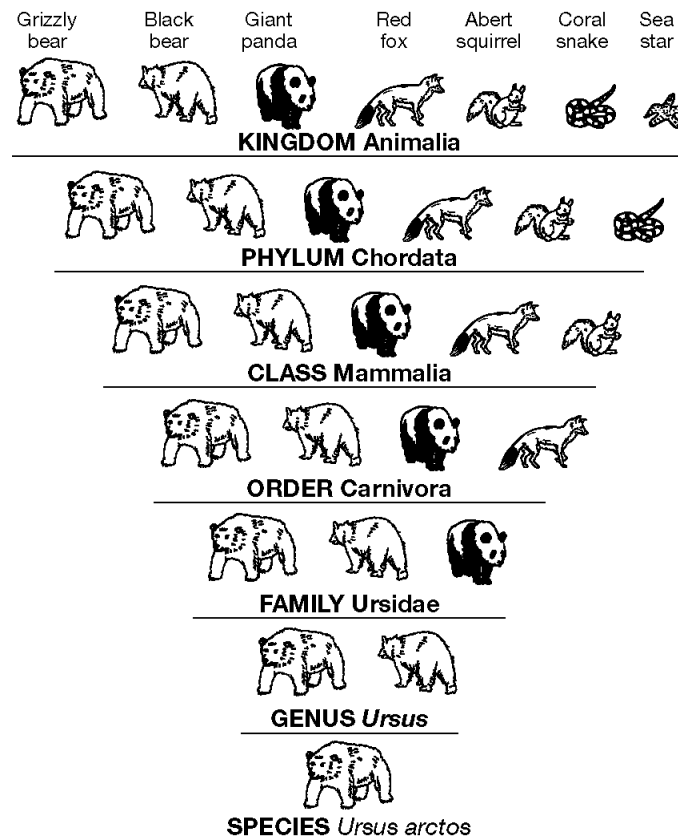


Figure 18–2

49. **Classifying** Do all organisms shown in Figure 18–2 that belong to the class Mammalia also belong to the genus *Ursus*? Explain.
50. **Inferring** Examine Figure 18–2. In which group, Ursidae or Carnivora, would you expect the members to be more similar to one another? Explain your answer.